

REMARKS

Claim 1 has been amended. Support for the amendment of Claim 1 appears in the specification at least at page 11, line 1 to page 13, line 7 and in FIGS. 4 and 5. Claim 3 has been amended to be in independent form and to include the features of base Claim 1.

Applicants note that an information disclosure statement including PTO Form 1449 was filed on August 25, 2003. Applicants request that the Examiner return the Examiner initialed PTO Form 1449 with the next communication.

The headings below are numbered to correspond with the heading numbering used by the Examiner in the Office Action.

4/5) Claims 1, 4-7 and 9-13 are patentable over Wojnarowski in view of Roberts, Jr. et al.

At page 5 of the Office Action under the heading "Response to Arguments" the Examiner states:

Applicants argue that Wojnarowski in view of Roberts, Jr. et al. do not teach or suggest a method coupling a wafer support to a first surface of a substrate since the surface of the substrate in Wojnarowski must be processed. **In response to this argument, the claim is open to treat the surface of the substrate prior to couple the surface of the substrate to the wafer support.** Also, Wojnarowski wasn't relied upon that purpose.

Claim 1 has been amended and now recites a method comprising:

coupling a wafer support to a first surface of a substrate;

subsequent to said coupling, aligning a drilling device at a first intersection of a first scribe line and a second scribe line coupled to said first surface of said substrate; and

drilling through said substrate at said first intersection with said drilling device from said first surface to a second surface of said substrate to form an alignment mark. (Emphasis added.)

As discussed further below, Wojnarowski teaches that the front-side surface of the wafer must be processed after formation of the "alignment holes". Accordingly, one of skill in the art would have no motivation to apply the "wafer support" of Roberts Jr., et al. to this front-side surface prior to the formation of the "alignment holes" since this would defeat the ability to process the front-side surface. For at least this reason, Applicants submit that amended Claim 1 is allowable over Wojnarowski in view of Roberts Jr., et al.

Specifically, the Examiner admits:

Wojnarowsky fail to teach coupling a front-side surface of a wafer to an interior surface of a transparent wafer support; optically recognizing a scribe grid coupled to said front-side surface of said wafer, wherein said support protects the front surface of said substrate; and washing said substrate to remove contaminants generated during said cutting. (Office Action, page 3, emphasis added.)

To cure this glaring deficiency of Wojnarowski, the Examiner cites Roberts, Jr. et al. Specifically, the Examiner states:

... Roberts Jr., et al. (Figs.2-5) in a related method to singularize a semiconductor wafer teach coupling a front-side surface of a wafer (32) to an interior surface of a transparent wafer support (26), wherein said support protects the front surface of said substrate and is sufficiently transparent to allow intersections in a wafer to be optically inspected through said wafer support (26); and washing said substrate to remove contaminants generated during said cutting ... (Office Action, page 3.)

However, Wojnarowski teaches that the front-side surface of the wafer must be processed after formation of the "alignment holes".

Specifically, Wojnarowski teaches:

As depicted in FIG. 2, **holes 50 are drilled through wafer 30** in saw lanes 38. (Col. 6, lines 64-65, emphasis added.)

After formation of holes 50, Wojnarowski further teaches:

Referring next to FIG. 3, an insulating coating 54 is formed on all exposed surfaces of wafer 30, including **top 32**, bottom 34 and within holes 50. ... With reference to FIG. 4, openings 56 are formed in insulating layer 54 to provide access to **top** interconnection pads 40. ... With reference to FIG. 5, wafer 30 ... [is] backspattered and metallized on **both sides**, forming metallization 60. ... A resist (not shown) can be applied to wafer 30, **covering all surfaces**. ... As shown in FIG. 6, the resist is developed and all excess metal removed, leaving patterned metal 62 by which **top** wafer pads 40 are electrically relocated to metal pads 64 on the bottom 34 of wafer 30. (Col. 7, lines 16-53, emphasis added.)

Thus, as set forth above, applying a "wafer support" to the front-side surface of Wojnarowski prior to the formation of the "alignment holes" would defeat the ability to process the front-side surface. Accordingly, combining Wojnarowski with Roberts, Jr. et al. would result in an inoperative assembly and thus one of skill in the art would not make such a combination.

For at least the above reasons, Wojnarowski in view of Roberts Jr., et al. does not teach or suggest a method as recited in amended Claim 1. Accordingly, Claim 1 is allowable.

Claims 4-7, 9-13, which depend from Claim 1, are allowable for at least the same reasons as Claim 1.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

6) Claim 8 is patentable over Wojnarowski in view of Roberts, Jr. et al. and further in view of Summerer.

As set forth above, Claim 1 is allowable over Wojnarowski in view of Roberts Jr., et al. Claim 8, which depends from Claim 1, is allowable over Wojnarowski in view of Roberts Jr.,

et al. for at least the same reasons as Claim 1. Summerer does not cure the previously described deficiencies in Wojnarowski in view of Roberts Jr., et al. Accordingly, Claim 8 is allowable over Wojnarowski in view of Roberts Jr., et al. and further in view of Summerer.

For at least the above reasons, Applicants respectfully request reconsideration and withdrawal of this rejection.

7-9) Allowable Subject Matter.

Claims 14-21 have been allowed.

Regarding Claim 3, the Examiner states:

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. (Office Action, page 4.)

Claim 3 has been amended to be in independent form and to include the features of the base Claim 1. Accordingly, Claim 3 is allowable.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of the objection to Claim 3.

Conclusion

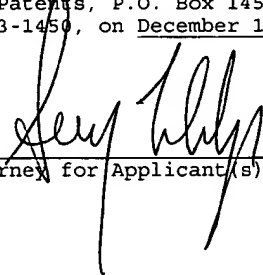
Claims 1, 3-21 are pending in the application. For the above reasons, Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the Examiner

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has any questions relating to the above, the Examiner is requested to telephone the undersigned Attorney for Applicants.

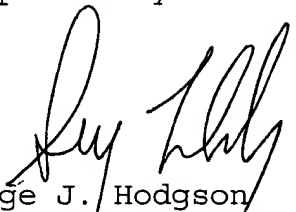
CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on December 15, 2003.


Attorney for Applicant(s)

December 15, 2003
Date of Signature

Respectfully submitted,


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